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ABSTRACT

The North Clackamas School District (Oregon) conducted the Student Cooperative Training Units (CTU) program. The CTU program addressed two key issues that disrupted the development and maintenance of local high technology businesses: (1) The aerospace parts casting, health care, and graphic reproduction industries have experienced a shortage of trained workers ready to enter the labor force; (2) in addition, the local training facility has a surplus of entry-level jobs that have gone unfilled by Sabin Skills Center graduates. Business/education partnerships were established with local high technology companies to solve recruitment problems and address barriers to employment. The CTU program served as a bridge between the Skills Center, postsecondary programs, and local industry. Internships gave students an opportunity to experience employment in high technology businesses. (Ten appendices are included: (1) cooperative demonstration program brochure; (2) student orientation materials; (3) internship design; (4) internship position description; (5) pilot program internship schedule; (6) on-site documentation form; (7) internship evaluation form; (8) pilot project outcomes; (9) school-year internship schedule; and (10) internship guidelines.) (NLA)

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Colleen Kobs, Health Occupations Instructor
John Makin, Graphic Technology Instructor
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Fayth Simantel, Advanced Information Systems Instructor

Owen Sabin Occupational Skills Center
North Clackamas School District

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Replication of the **Final Performance Report**
completed by
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I. INTRODUCTION

The North Clackamas School District in cooperation with Block Graphics, Incorporated, Precision Castparts Corporation, and Providence Milwaukie Hospital conducted a High Technology Cooperative Demonstration Program funded through a grant award (V199A00037) from the U.S. Department of Education for $257,274. The Student Cooperative Training Units project was funded from January 1, 1990 - June 30, 1991, an eighteen-month period.

The Student Cooperative Training Units "CTU" Program was designed to address two key issues proven to be disruptive to the development and maintenance of local high technology businesses. The aerospace parts casting, health care, and graphic reproduction industries have suffered a shortage of trained workers ready to enter the labor force. In addition instructors at The Owen Sabin Occupational Skills Center, the local technical training facility, have been frustrated by the surplus of entry-level jobs which have gone unfilled by Skills Center graduates.

School district administration and The Northwest Regional Educational Laboratory worked in tandem to formulate a plan to address these problems. Through their work, a joint recommendation resulted which suggested business/education partnerships be established with local high technology companies. It was felt that partnerships would be an

effective tool for industry to use in solving recruitment issues and also appropriate for the district to utilize in addressing barriers to employment that secondary-level vocational students often face.

II. NEED

The State of Oregon has long since recognized that critical changes are occurring in its work force. Current technology is impacting how we conduct business and produce goods. The level of competition is rising dramatically. The number of young people entering the work force is declining. As a result, labor is reemerging as one of the most important inputs to manufacturing and the production of services.

Qualified entry-level workers are in short supply throughout the state and locally within Clackamas County. This shortage is especially dramatic for high technology companies. Recognition of this fact has spurred Oregonians to develop innovative approaches toward supplying technical training opportunities for youth.

Oregon is rapidly moving toward incorporating many of the concepts contained in the "America's Choice: High Skills or Low Wages" model prepared by the National Center on Education and the Economy's Work Force into its plan for employment and training. The model concentrates on extending the school year, starting "professional technical training" earlier in a student's educational program, and providing community-based training

designed to enhance vocational skill development. Legislators and educators believe that aggressive measures need to be taken to reduce the labor problems local companies are experiencing; if not, Oregon's economic development will be slowed to a level unacceptable to most of the population.

North Clackamas School District's Owen Sabin Occupational Skills Center, The Oregon State Department of Education, and The Northwest Regional Educational Laboratory, cooperated with local high technology businesses to develop a coordinated delivery system for vocational/technical training at the secondary level. The delivery system evolved to incorporate a strong community-based training piece similar to the experience a student would gain through participation in an internship or apprenticeship program.

Traditionally none of the project business partners had sponsored apprenticeships or internships, either due to high operational program costs, or due to their lack of expertise in establishing quality training programs. Also many of the managers and supervisors in the targeted industries have had little experience working with or training today's youth.

Previously, the local work force had been comprised of a very small percentage of 16-18 year olds; however, representatives from business and industry recently have come to the realization that the composition of their labor pools has changed drastically. Increasingly, women and minorities make up the majority of new hires. Cultural and

language barriers add to the already complex work environment. The willingness of agencies, institutions, and the private sector to work together has made a significant contribution toward eliminating barriers to employment and local labor shortages.

III. PURPOSE

The purpose of The Student Cooperative Training Units Program is to facilitate the transition of students attending The Owen Sabin Occupational Skills Center into high technology occupations through the cooperative efforts of industry and education. This program has served to act as a bridge between the Skills Center, post-secondary programs, and local industry being impacted by technological change.

IV. OBJECTIVES

1. Coordinate development of curriculum for Advanced Information Systems, Graphic Technology, and Health Occupations occupational cluster programs which will prepare students for entry into selected high technology fields.

2. Provide students with practical training using high technology tools.

3. Pilot implementation of CTU Program in each of the three occupational areas: Office Systems, Printing, and Health Careers.

4. Refine and revise curriculum as necessary.

5. Operate full school year CTU Program.

6. Evaluate project impact on participating staff, students, and business.

7. Disseminate project's approaches, processes, materials, techniques, and evaluation findings to state and national audiences.

V. DESCRIPTION OF THE PROJECT

Three occupational cluster programs at the Skills Center were targeted for participation in the project: (See Appendix A)

Advanced Information Systems (AIS)-Advanced Information Systems provides an innovative, professional business environment where students receive office systems training. Each individual workstation in the training center is equipped with a networked computer terminal utilizing an office automation software program which includes full-function word processing, electronic mail, calendaring and scheduling, and information management. In addition to automated office functions, AIS students also learn business communications and human relations skills; necessary companions for young office professionals.

Students enrolled in the second year of AIS participate in "CTU" activities conducted in cooperation with **Precision Castparts Corporation.** Training is designed to focus on computer hardware and software utilized by the aerospace industry.

Graphic Technology-Graphic Technology prepares students for initial employment in the graphics industry. Students gain knowledge and develop technical skills in: desk-top publishing, comprehensive layout, paste-up, process camera operation, masking and

stripping, platemaking and preservation, offset press operation for singular and multi-color processes, hazardous chemical handling, and safety.

The individualized instructional program allows students to progress through the curriculum at their own pace. They are given the opportunity to design or create special projects and be responsible for the quality control of their own production.

Industry-based training has been developed for advanced-level students in cooperation with **Block Graphics, Incorporated**. Activities are structured to provide emphasis in departments that have incorporated the latest technological innovations into their production process.

Health Occupations-Health Occupations is designed for high school juniors and seniors who are interested in exploring careers available in the health care industry. Through extensive study in human anatomy and physiology, microbes and disease, medical terminology, health-related skills and career exploration; students develop a broad base of knowledge and experiences necessary to make valid, informed career choices.

Clinical rotations for second-year students have been developed in cooperation with **Providence Milwaukie Hospital**. Internships focus on providing both technical and supervisory training for students.

Students from Advanced Information Systems (AIS), Graphic Technology, and Health Occupations cluster programs were eligible to participate in the "CTU" Program. Teachers selected participants based on their maturity level, behavior demonstrated in class, success in previous community-based training, academic performance, and career interests.

Each candidate matching the instructor's selection criteria was referred to the business partner as a prospective participant in the community-based training component of the demonstration program.

Student applicants were required to follow the hiring process normally utilized by the business partner's company. They were initially interviewed by human resources' personnel, then referred to the appropriate site supervisor for an additional interview and/or skills testing.

Industry-based training provided student/interns the opportunity to be integrated into the work flow of the business partner's company. Internships were structured to require the trainees to utilize state-of-the-art technology in each of the industries.

The "CTU" Program was created to enhance student attainment of technical and non-technical skills needed to succeed in a work environment. The interns were trained in positions targeted to include duties which facilitated decision-making, problem-solving, and

conflict resolution skill development. Internships also allowed students to work collaboratively with permanent employees of the sponsoring company.

Interns were directly accountable to their program instructor and the company internship supervisor for monitoring the accuracy and quality of their work performance. They were allocated high school credit based upon the number of hours spent on site in the business community.

Upon graduation, students were expected to enter the work force of the industry they had trained in, pursue additional technical training, or continue their education at a community college or university.

The "CTU" Program provided students numerous benefits for participation:

1. Readiness to accept initial employment
2. Increased job-specific skill development
3. Experience in situations which facilitated development of decision-making, problem-solving, and conflict resolution skills
4. Opportunity to glean information about the career field of their choice before pursuing advanced education or technical training

The "CTU" Program provided numerous benefits to its business sponsors:

1. Access to a custom-designed training program which produced high quality, prospective employees
2. Assistance from vocational/technical program instructors in monitoring intern performance and skill development

3. Opportunity to assist today's youth in making appropriate career choices for tomorrow's workplace

4. Opportunity to work with educators in structuring program curriculum to meet the needs of local business and industry

VI. PROJECT IMPLEMENTATION

The purpose of The Student Cooperative Training Units Program was two-fold. It was designed to address labor shortages local high tech companies were facing and to assist secondary-level vocational students in successfully transitioning into the work force.

A strategic plan for the project was developed through the collaborative efforts of The North Clackamas School District, The Oregon Department of Education, The Northwest Regional Educational Laboratory, and representatives from local high technology business and industry. Printing, aerospace parts casting, and health care were targeted for sponsorship of the project due to the limited availability of trained workers in their industries, and because they had traditionally exhibited a strong commitment toward providing education and training for youth.

Historically, each program instructor had established partnerships with industry-related companies located in the immediate geographic area. Sponsorship of the cluster programs assumed many formats. The most common methods of providing guidance and

support for education were: membership in program advisory committees, donation of equipment and supplies, hosting student field trips, class presentations, and attending career fair functions.

In preparation for implementation of the pilot project, instructors delivered a student orientation session for those interested in the summer internship program component. (See Appendix B) Student response to the training design was enthusiastic. Project administration and staff identified two key factors of interest. Students indicated they would be interested in becoming an intern if high school credit for on-site training time was awarded, and if they were paid a stipend. Students felt they could not afford to sacrifice the opportunity to work and earn an income during their summer vacation. Project funds were utilized to compensate interns for expenses incurred during training. Stipend awards were computed based upon the complexity of training conducted and the amount of on-site time required of the intern.

Business sponsors and supervisory personnel responsible for interns attended program orientation meetings conducted by the project director and vocational instructors. The purpose and goals of the Cooperative Demonstration Program were explained. Guidelines for student training and performance were established in conjunction with industry personnel. (See Appendix C) Supervisors and instructors reviewed training

descriptions to assess expectations for student performance. Duties and tasks were carefully designed with specific outcomes defined for each placement.

The first step in this process involved designing the internships to meet the needs of the business supervisors. Next, through a series of meetings with supervisors, or their designee, the training plan was refined to be inclusive of the technical and non-technical skill development prescribed in the CTU Program proposal.

The pilot phase of The CTU Program was implemented in June of 1990. Students were initially recommended for participation by their vocational instructors. Candidate interests and skill levels were then matched with internship training descriptions. (See Appendix D) Final placement of trainees was left to be determined by the business partner.

Human resource staff and internship supervisors required trainees to follow the selection process prescribed by their company for permanent employees. Upon acceptance into the CTU Program, interns were scheduled into new employee orientation, a company tour, and given an employee handbook for review.

Interns began on-site training activities at various times. Each student's work schedule was negotiated between the internship supervisor and the student/intern. Project staff initiated this flexibility for the convenience of supervisors and support staff members. Each student was authorized to complete approximately 180 hours of training over a six-week period of time. (See Appendix E)

Instructors required student/interns to make notations or record thoughts and feelings about their training on a daily basis. Journals were submitted for review each week. Instructors felt students would be more inclined to remember and share experiences if they were responsible for recording events and submitting documentation. The writing requirement enhanced student composition skills and served as a tool to increase communication between the interns and teachers. (See Appendix F)

Since training structure was defined by the business sponsors, students were trained individually within each organization. In order to further facilitate communication and sharing, instructors planned group debriefing sessions. During the sessions, students celebrated triumphs and reported mistakes or difficulties encountered in coping with company culture or technical training. Discusssions occurred in a relatively risk-free environment with mutual understanding and support exhibited by their peer group.

Each business sponsor extended invitations to project staff to make site visitations on a regular basis. In general, teachers scheduled coordination conferences on a weekly basis with internship supervisors. During visitations instructors discussed student/intern performance. This time on site also provided instructors with an opportunity to learn more about the impact technological change had made in the workplace. (See Appendix G)

During conversations with supervisors and other departmental employees, teachers became aware of new equipment, procedures, and processes currently being utilized in

their business sponsor's company. As a result, each instructor brought new perspectives to their program's plan for curriculum and instruction. They found themselves integrating the newly acquired information and feedback from employees into their instructional program. Up-date activities enhanced instructor efforts to develop customized training which prepared students for direct entry into the local high technology labor market. Also staff was better prepared to make decisions in regard to equipment, computer software, and instructional materials needed to support vocational cluster training programs.

VII. RESULTS OF PILOT PROJECT TRAINING

The pilot project was judged to be a success. Feedback from student/interns, business sponsors, and project staff members indicated positive performance outcomes for students. (See Appendix H)

VIII. EVALUATION PROCESS

A formal evaluation study was conducted to provide feedback for project business partners, staff members, and The U.S. Department of Education regarding the operation of The North Clackamas School District's "CTU" Program. The evaluation process proceeded through two stages. First, a formative evaluation process was conducted at the completion of the pilot phase. The formative evaluation was designed to be a measure of the success

project staff demonstrated in meeting defined objectives and to help guide and improve implementation of the school year program. A summative evaluation was written to determine the overall effectiveness of the project at the completion of the program.

DATA COLLECTION AND ANALYSIS STRATEGIES

1. **Student Background Survey:** Data on grade level, sex, age, race, experience, career goals, and reason for participation in the program.
2. **Interviews:** Conducted with students, instructional staff, administrators, and business partners.
3. **Pre- and Post-Assessments of Occupational Skills:** Measured student attitudes, occupational skills, and technical skill levels.
4. **Survey of Student Perceptions:** Gathered information on program strengths and weaknesses as perceived by students.
5. **Site Visits:** Observations of the business sites.
6. **Analysis of Project Documentation:** Budget records and activity logs were analyzed.

Due to the complexity of the project design, the school district contracted with The Northwest Regional Educational Laboratory to provide both technical support and to conduct the evaluation of the program. Working with three businesses operating in different industries as well as three distinct vocational cluster programs created a complex management matrix which demanded careful administration and coordination. The technical

assistance provided by the Northwest Regional Educational Laboratory in the beginning phases of the project was invaluable.

The information reflected in the formative evaluation provided project staff with insight about perceptions of project effectiveness from management, supervisory personnel, and program participants. In general, vocational instructors and business partners readily accepted recommendations for program improvement and proceeded without delay to implement the suggested refinements.

The formative evaluation process was an activity crucial for ensuring success of the project. The evaluation proved to be an effective tool in facilitating communication between educators and business sponsors. In addition, when recommendations were discussed with business managers, barriers to communication existing within the organizations were discovered and addressed. As a result, interaction between educators and business sponsors was increased and project activities strengthened.

IX. SCHOOL YEAR PROGRAM

Project staff members utilized the remaining summer months to plan for implementation of the school year program. During planning meetings it was discovered that the full-year project structure would largely be determined by the students' availability during the day. The internship design was modified to accomodate the student's high school class and

activity schedules. Interns were unable to train for six hours per day as previously required in the pilot program. Instructors, in conjunction with supervisors, modified internship schedules to allow students approximately three hours per day on site. It was felt that this requirement, in addition to the student's obligation to their classes, was the maximum time commitment that could be expected from a junior or senior high school student. (See Appendix I)

Although this design worked well for trainees and teachers, it proved to be difficult for business sponsors. Training activities seemed to be more beneficial for all those involved if the time period could be extended to four or more hours per day. Longer periods of time on site facilitated more complexity in responsibilities and duties assigned to interns. Teachers implemented modifications that could be made to accomodate the business sponsors' schedule and production needs.

Students continued to be placed individually within the businesses. This decision was made jointly by the internship supervisors and instructors. Over the course of the pilot, it became clear that the original vision of providing training to groups of students in their business environment was unworkable. To compensate for the lack of interaction between students on site, interns were required to record daily entries in journals and to attend

debriefing sessions where they discussed experiences in the workplace with their peers. Internships were structured to encompass a four to six week period, depending upon the focus of training.

While supervising student training activities, instructors spent a number of hours at the business sponsors' facility. In the course of their coordination visits, teachers talked with internship supervisors and departmental support staff. As a result of their observations and conversations, each of the project staff members indicated that there was a need to continually revise their program curriculum to fit the demands of the rapidly changing workplace. Instructors worked extended hours during the summer to address curriculum renewal activities they deemed necessary.

Representatives from business and industry serving on program advisory committees were asked to examine curriculum revisions. Instructors utilized committee members' insights and recommendations to plan for implementation of the school year program. Reactions to suggested modifications were very positive. Businessmen and women were pleased to see increased emphasis on incorporating new technologies into instruction and the new trends in their industries being addressed in the vocational cluster programs.

Progam changes increased the need for communication between educators and industry. The instructors scheduled meetings with human resource personnel and

internship supervisors to discuss the new training format, expectations for student outcomes, and termination of student stipends. (See Appendix J) High school credit continued to be awarded for participation in the program.

At this point, business partners made suggestions about specific topics they would like to see included in program curriculum. Precision Castparts requested that excerpts from their employee handbook be included in program orientation concerning grooming, attendance, and performance expectations. In addition, Block Graphics requested hazardous chemical handling become a prerequisite for placement in their facility. Providence Milwaukie Hospital indicated that increased emphasis in the Health Occupations Program curriculum on computer literacy would be useful.

Basically, instructors identified two major differences between the pilot and the school year program. The amount of time scheduled for internship training on a daily basis varied between the two phases of the program. Training scheduled for longer amounts of time per day was determined to be most effective for business sponsors and trainees. Supervisors and students found six hours per day to be the optimal structure for industry-based training. The payment of stipends to program participants also affected project outcomes. The quality of some students' attendance and performance on site seemed to be directly related to receiving compensation for participation.

X. RESULTS OF THE SCHOOL YEAR PROGRAM

The North Clackamas School District contracted with The Northwest Regional Educational Laboratory to conduct a summative evaluation of The Student Cooperative Training Units Project. The purpose of the evaluation was to assess the overall success of the project in meeting the objectives defined for the program. In addition, the process was designed to facilitate participation in the national-level Cooperative Demonstration Program evaluation study conducted by COSMOS.

The summative evaluation report will be completed by the NWREL and will be available after August, 1991, under separate cover, through the ERIC Clearinghouse or the National Network for Curriculum Coordination in Vocational-Technical Education (NNCCVTE).

XI. DISSEMINATION ACTIVITIES

Dissemination materials were designed to assist administrators and instructors in making local and national presentations to explain the demonstration program. The packets contained a twenty-minute videotape which was designed to illustrate the vocational training programs involved in the project and the CTU concept. Program brochures were also developed to distribute to interested business and industry groups, parents, instructors, and school administrators. One hundred (100) dissemination packets were distributed across the nation.

Instructors and administrators presented the project at the following regional and national conferences: Graphic Arts Technical Foundation, Western Regional Meeting (Los Angeles, California); American Vocational Association (Cincinnatti, Ohio); Business-Education Partnership Conference (Portland, Oregon); Work Now and The Future 7 (Portland, Oregon); National Business Education Association (Nashville, Tennessee); and American Association of Community and Junior Colleges (Kansas City, Missouri).

Presentations were also given to local business groups such as The Rotary, The Chamber of Commerce, and The Sunnyside Corridor Association. Meetings held within the school district were scheduled for various groups.

Dissemination materials were distributed throughout the State of Oregon to Regional Vocational Coordinators, The Northwest Regional Educational Laboratory, and The State Department of Education.

Appendices

A. Cooperative Demonstration Program Brochure

B. Student Orientation Materials

C. Internship Design

D. Internship Position Description

E. Pilot Program Internship Schedule

F. On-Site Documentation Forms

G. Internship Evaluation Form

H. Pilot Project Outcomes

I. School Year Internship Schedule

J. Internship Guidelines

Appendix A

The enclosed brochure was designed for inclusion in the program dissemination packet.

BUILDING THE WORK FORCE FOR THE FUTURE...

Student Cooperative Training Units Project was conducted in conjunction with:

Block Graphics, Incorporated
Precision Castparts Corporation
Providence Milwaukie Hospital

Oregon State Department of Education
Northwest Regional Educational Laboratory

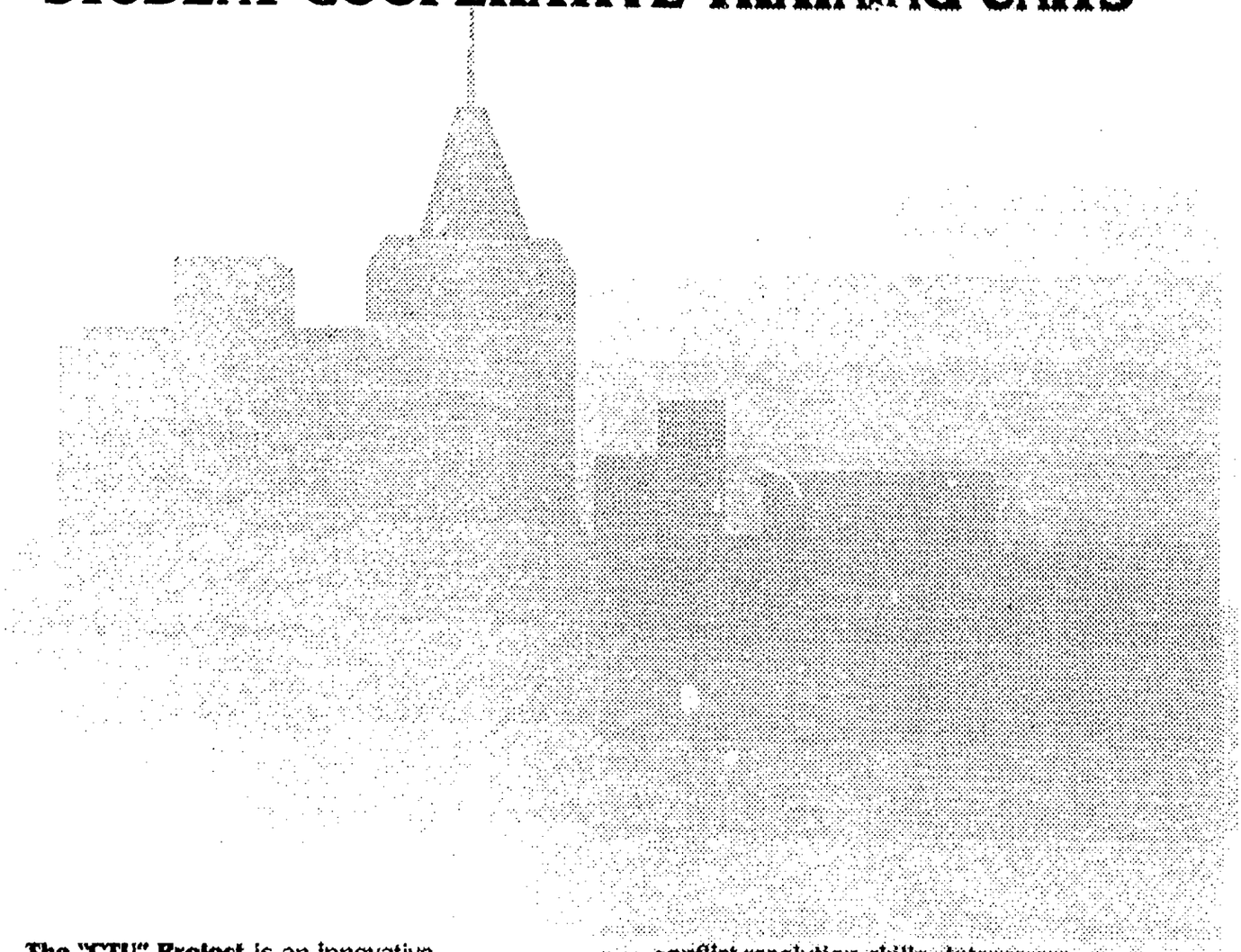
North Clackamas School District

This brochure and its contents were developed through a Cooperative Demonstration Program grant from the U.S. Department of Education, Office of Vocational and Adult Education. Seventy-five percent of the project was financed from federal funds. The grant award to North Clackamas School District was $257,274. The district and the project's corporate sponsors contributed 25% in-kind matching funds, $64,318.50

STUDENT COOPERATIVE TRAINING UNITS

A unique training program conducted in cooperation with industry which addresses current and emerging technology in the graphics, health care, and information management career fields.

STUDENT COOPERATIVE TRAINING UNITS



The "CTU" Project is an innovative approach to linking vocational/technical education and the private sector for high-technology training.

Students from the Owen Sabin Occupational Skills Center are integrated into the work flow of local high-tech companies. This industry-based training provides students the opportunity to utilize state-of-the-art technology and to work collaboratively with the employees of their corporate sponsor.

Internships allow students to train in positions which facilitate the development of decision-making, problem-solving, and conflict-resolution skills. Interns are directly accountable to their program instructor and company supervisor for monitoring the accuracy and quality of their performance.

At the local, state, and national level, the shortage of qualified, entry-level workers in career fields impacted by high technology is growing rapidly. Deficiencies in the labor force have become particularly acute in the graphic reproduction, information management, and health care areas. The "CTU" Project was funded by the U.S. Department of Education to address the training needs in these three industries.

ADVANCED INFORMATION SYSTEMS

Advanced Information Systems (AIS) provides an innovative, professional business environment where students receive office systems training. Each individual workstation in the training center is equipped with a networked computer terminal utilizing an office automation software program which includes full-function word processing, electronic mail, calendaring and scheduling, and information management. In addition to automated office functions, AIS students also learn business communications and human relations skills – necessary companions for young office professionals.

"CTU" PROJECT: Students enrolled in the second year of AIS participate in "CTU" activities conducted in cooperation with Precision Castparts. Upon entry into AIS, students are counseled in regard to their career goals, educational preparation, and technical skill level.

The instructor assesses student readiness for industry placement. Internship training is structured to cover a six-week period, two hours per day. Interns rotate through approximately four training sites during the school year.

Training is designed to focus on the computer hardware and software utilized by the aerospace industry. Emphasis is also placed on acclimating the trainee to Precision's corporate culture and integrating them into the work flow of the company.

Project activities conducted in cooperation with **Precision Castparts Corporation.**

HEALTH OCCUPATIONS

Health Occupations is designed for juniors and seniors who are interested in exploring careers available in the health care industry. Through extensive study in human anatomy and physiology, microbes and disease, medical terminology, health related skills and career exploration, students develop a broad base of knowledge and experiences necessary to make valid, informed career choices.

In the second year of the program students have an opportunity during class time to actually work in various health care facilities related to their career interest.

"CTU" PROJECT: Clinical rotations for second year students have been developed in cooperation with Providence Milwaukie Hospital. Each internship is designed to focus training activities in the health care services that have been impacted most dramatically by technological change.

Trainees have been placed in the Pharmacy, Diagnostic Imaging, Nursing Administration, Emergency Room, Employee Health, and Infection Control Departments. Students are scheduled to work with a hospital staff member for four weeks, two hours per day.

Internships focus on providing both technical and supervisory training for students. Through participation in multi-disciplinary committee meetings and hospital accreditation activities, interns gain an understanding of the administration and management of a health care facility.

Project activities conducted in cooperation with **Providence Milwaukie Hospital.**

GRAPHIC TECHNOLOGY

Graphic Technology prepares students for initial employment in the graphics industry. In general, students will gain knowledge and develop technical skill: desk-top publishing, comprehensive layout, paste-up, process camera operation, masking and stripping, platemaking and preservation, offset press operation for singular and multi-color processes, hazardous chemical handling, and safety.

The individualized instructional program allows students to progress through the curriculum at their own pace. They are given the opportunity to design or create special projects and be responsible for the quality control of their own production.

"CTU" PROJECT: Industry-based training has been developed for the advanced level students in Graphics Technology. Students are required to complete the employee application process prescribed by Block Graphics. Upon acceptance into the program, interns are scheduled for participation in new employee orientation, safety training, and a tour of the corporate facilities.

Interns are rotated through computer-aided design, pre-press, platemaking, press operation, bindery, and the shipping and receiving departments. Trainees are scheduled for on-site activities four hours per day, two days per week for a semester.

Training is structured to provide emphasis in the departments that have incorporated the latest technological innovations into their production process. Initial employment opportunities are dramatically increasing in these production areas.

Project activities conducted in cooperation with **Block Graphics Incorporated**

Benefits to Employers:

- Access to a custom-designed training program which produces a high-quality, prospective employee
- Assistance from vocational/technical program instructors in monitoring intern performance and skill development
- Assist youth of today in making appropriate career choices for tomorrow's work place
- Opportunity to work with educators in structuring program curriculum to meet the needs of local business and industry

Benefits to Students:

- Readiness to accept initial employment
- Increased job-specific skill development
- Experience situations which facilitate development of decision-making, problem-solving, and conflict-resolution skills
- Opportunity to glean information about the career field of their choice before pursuing advanced education or training

Corporate Sponsors for the "CTU" Industry-Based Training Activities:

- Block Graphics, Incorporated
- Precision Castparts Corporation
- Providence Milwaukie Hospital

FOR MORE INFORMATION CONTACT

Owen Sabin Occupational Skills Center
North Clackamas School District 12
Rebecca Wheeles, Project Director
14211 S.E. Johnson Road
Milwaukie, OR 97267
Telephone: (503) 653-3812

Appendix B

The student orientation session established the foundation for industry-based internship training. Interns began the high technology training component fully aware of expectations for performance and development of outcomes.

TRAINEE ORIENTATION
COOPERATIVE DEMONSTRATION PROGRAM
AIS/PRECISION CASTPARTS CORPORTION

AGENDA

I. Student Cooperative Training Units
- A. Purpose
- B. Training Opportunities
- C. Business Partnership

II. Requirements
- A. Transportation
- B. Attendance
- C. Time Cards
- D. Stiperid
- E. Dress
- F. Communication
- G. Training Seminars (OSC/AIS, 2:30 P.M.)
  July 11, 1990; July 25, 1990; August 8, 1990

III. Work Environment
- A. Orientation
- B. Process/Procedures
- C. Dealing with Change
- D. Following Directions

IV. Supervision/Evaluation
- A. Precision Supervisor
- B. Instructor

COOPERATIVE DEMONSTRATION PROGRAM

OWEN SABIN OCCUPATIONAL
SKILLS CENTER
NORTH CLACKAMAS SCHOOL DISTRICT

Your son/daughter, _____ has applied to participate in The Cooperative Demonstration Training Program this summer.

Students will be involved in training activities on site at Block Graphics for approximately six (6) weeks, four (4) days per week, six (6) hours per day during the summer. Program participants will be responsible for providing their own transportation to the training site on a daily basis.

PROGRAM BENEFITS:

* Training activities will be designed to give students experience operating high technology equipment.

* Work assignments will be provided that allow students the opportunity to develop problem-solving and decision-making skills, to work effectively as a team member, and be accountable for quality control in their work environment.

* One-half (.5) unit of high school credit will be awarded for program participation.

* Students will receive a stipend of $714.00 at the completion of the six-week training.

* Students will be supervised/evaluated jointly by John Makin and Hal Jensen, Graphic Technology instructors, and their Block Graphics' supervisor.

By checking appropriate space/spaces below and by signing this authorization form, permission is given for the above named student to participate in the Cooperative Demonstration Program and to travel to Block Graphics, Incorporated and Owen Sabin Occupational Ski'ls Center.

A. Driving private vehicle without passengers ___Yes___No

B. Driving private vehicle with other passengers ___Yes___No

C. Riding as a passenger in a private vehicle operated by another student ___Yes___No

NOTE: In the above cases (A, B, and C), the student driver must carry the minimum liability protection required by Oregon law.

D. School district transportation ___Yes___No

E. Public transportation ___Yes___No

Students under eighteen (18) years of age require signatures of parents or guardians. Students over eighteen (18) years of age may sign this form with full understanding that they are considered by law to be responsible adults.

_____ Date _____
Parent or Guardian's Signature

_____ Date _____
Student's Signature

Appendix C

Expectations for student performance were communicated to internship supervisors.

Owen Sabin Occupational Skills Center

North Clackamas
School District No. 12
14211 S.E. Johnson Road
Milwaukie, Oregon 97267-2397

June 1, 1990

Mr. Bob Ziesloff
Industrial Engineering
Precision Castparts
4600 S.E. Harney Drive
Portland, OR 97206

Dear Mr. Ziesloff:

Thank you for indicating your willingness to create an internship position for a student from The Owen Sabin Occupational Skills Center this summer. The employees of Precision Castparts have indicated they would provide training for a total of twelve students through The North Clackamas School District's Cooperative Demonstration Project. The industry training program will strengthen the students' technical skill levels and allow them to more easily transition into the workplace upon completion of their educational program.

I have enclosed a description of the project and an explanation of the activities that are scheduled during its eighteen month funding. We would like to extend the business/education partnerships beyond this time period and continue to work with the local business community to offer unique opportunities for our students.

The students participating in the project are expected to behave and work in the same manner as the permanent employees in your department. We would like you to integrate them into the work flow of the company. If you feel that attendance at a new employee orientation or other training sessions would aid them in adjusting to their new assignment, please feel free to make the appropriate arrangements.

You will be the student's direct supervisor. It is your role to manage or supervise their training and tasks on a daily basis. The AIS program instructor, Fayth Simantel, will be available for assistance should a situation occur that causes you to have a question concerning the student or their performance.

Timothy P. Olson, Principal (503) 653-3813 ● Sue Shields, Assistant Principal (503) 653-3814

Trainees will be asked to complete time cards on a weekly basis. The cards will be collected from your department each Monday by a staff member from The Skills Center. A supervisor's signature is required for validation of attendance.

Students will be paid a stipend for participation in the project. The payment they receive will be contingent upon the amount of time they have spent in training. An agreement between Precision's Human Resource Department and the school district has been reached concerning the cost that will be charged to your budget. Upon completion of the pilot phase of the project in August, Precision will be billed $180 for each student intern.

After you have completed your selection process, please contact me. At that point I will schedule a time for you and Fayth Simantel to meet and finalize the arrangements for your new intern. If possible, we would like to schedule all supervisor meetings to be held on June 13th. This date would facilitate the completion of student placement before the ending of the school year.

I am looking forward to working with you to implement The Cooperative Demonstration Project. I believe that the partnership that we have established with Precision Castparts is unique and exciting. I am sure that you will enjoy working with your intern this summer. If I can be of any assistance, please feel free to contact me.

Sincerely,

Rebecca Wheeles
Project Director

cc Corwin Matthews
Fayth Simantel

OWEN SABIN OCCUPATIONAL SKILLS CENTER
NORTH CLACKAMAS SCHOOL DISTRICT
"STUDENT COOPERATIVE TRAINING UNITS"

PROGRAM OVERVIEW

PURPOSE

The North Clackamas School District's Cooperative Demonstration Project is designed to provide students with the opportunity to participate in an unique training program which is offered by the Owen Sabin Occupational Skills Center in conjunction with the local business community.

PROJECT FOCUS

The **AIS** (Advanced Information Systems) instructor, **Fayth Simantel**, is working with personnel from **Precision Castparts** to coordinate classroom instruction with on-site industry experience. Students rotate through various training sites selected to match with their skills and long-term goals. They gain experience working with personal computers, industry-specific software, scheduling, analyzing data, costing, automated inventory control, report writing, forecasting, and trending for company planning.
Number of Student Participants for Pilot Phase: 12

The **Graphic Technology** instructors, **John Makin and Hal Jensen**, are working with **Block Graphics** to enhance their program curriculum and assist students in making the transition from school to industry. Students are involved in training both on the production floor and in the technical support offices within the company. They gain experience in the actual design, layout, and reproduction utilizing "state of the art" equipment.
Number of Student Participants for Pilot Phase: 7

The **Health Occupations** instructors, **Colleen Kobs and Ginny Markell**, are working with **Providence Milwaukie Hospital** to develop additional clinical rotations. They targeted departments that have been impacted with the greatest degree of technological change. Through this project, the hospital is providing training in six major areas: Pharmacy, Radiology, Infection Control, Employee Health, Medical/ Surgical Department, and Nursing Administration. Each component of the on-site experience is designed to provide students a combination of experience in utilizing high technology equipment and patient care.
Number of Student Participants for Pilot Phase: 5

STRUCTURE

Each company has unique training needs and work schedules. The number of hours students spend on site will vary depending upon the specific placement that is developed for their participation.

Industry-based, specialized training is available to students throughout the Cooperative Demonstration Project (January 1990-June 1991). Student placement will be divided into two phases: the pilot phase of the project is scheduled June-August 1990; the full-year internship program is scheduled for November 1990-May 1991.

REQUIREMENTS FOR PARTICIPATION

To be eligible for participation in the CTU Pilot Project, students are expected to be enrolled in one of the three cluster programs (AIS, Graphic Technology, or Health Occupations). They must be recommended for participation by their vocational/technical program instructor. Criteria for attendance, academic achievement, behavior on campus, etc. will be outlined by each teacher.

All participants must provide their own transportation to the training site. There may be opportunities for students to car pool if they obtain parental permission.

BENEFITS

Participation in the project will allow students to gain training and experience that is directly related to their career goals. Students will have the opportunity to apply the technical skills that they have learned through their vocational training at the Skills Center. They will also learn the function and operation of high-tech equipment that is being utilized by local industry.

Trainees will be placed in situations which require them to work with employees of the business partners, train other students, and determine the quality of the work they have produced in comparison to the industry standard.

High school credit will be granted for program participation. The amount of credit earned will be determined by the number of hours spent on site during the summer and/ or the number of additional hours the students are involved with project activities during the school year.

Students will earn a stipend for their involvement in the project's summer activities.

For more information, contact:

Rebecca Wheeles, Project Director
Owen Sabin Occupational Skills Center
14211 S.E. Johnson Road
Milwaukie, OR 97267
Telephone: (503) 653-3812

The Student Cooperative Training Unit Project is a federal grant program under the U.S. Department of Education, Department of Vocational and Adult Education. The grant is authorized by the Carl D. Perkins Vocational Education Act of 1984. The North Clackamas Cooperative Demonstration Program grant award was $257,274.00 which is 75% of the total project cost.

Appendix D

Internship supervisors were asked to compose position descriptions for each trainee.

Health Services Data Management Project
Student Intern Position Description

Precision Castparts Corp.

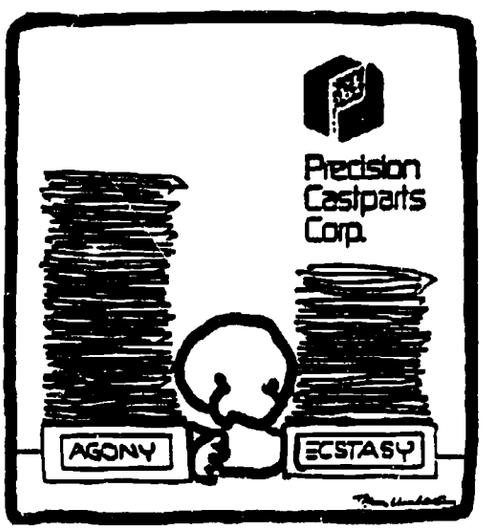
4600 S.E. Harney Drive
Portland, Oregon 97206
Telephone 503-777-3881
Telex 36-0902
Telecopier 503-652-3593

First Student:

1. Work with Kathy Bills, HRMIS Manager, to download initial demographics and develop process for new employee information to be transferred, from mainframe to PC's, on a weekly basis or as needed.
2. Become familiar with applicable PCC policies and procedures.
3. Work closely with student interns located in other Health Services Department to ensure that information entry and report formats are identical.
4. Develop process and necessary documentation (manual) to get information into system.
5. Begin data entry process.
6. Begin generating reports.
7. Training of subsequent students.

Subsequent Students:

1. Become familiar with duties and Health Services computer system.
2. Become familiar with applicable PCC policies and procedures.
3. Data organization and entry.
4. Generation of meaningful reports, given key information to be retrieved/organized.
5. Work with Grant Coordinator on evaluation of Health Services Data Management Project.
6. Training of subsequent students.



NOTE: Because this is a fairly new project, the need may arise for additional duties not listed above. As these needs arise, it will be necessary for you to develop procedures to address these issues.

Appendix E

Intern placement and scheduling were determined jointly by teachers and site supervisors.

STUDENT COOPERATIVE TRAINING UNITS
PILOT PROGRAM INTERNSHIPS

AIS: Precision Castparts, Inc.

Student	Site	Supervisor	Dates
Maret Anderson	Production Engineering	John Barnes	06/12/90 -07/24/90
Brandy Clark	Education & Training	Julie Gray	06/18/90 - 07/27/90
Jason Haggart	Tool Engineering	Bob Bodyfelt	07/02/90 - 07/06/90 07/16/90 - 08/17/90
Stephanie O'Connell	Manufacturing & Engineering Maintenance Department	Carol Watt Dalin Bob Schaber	06/18/90 - 07/27/90 07/30/90 - 08/17/90
Kristine Pottratz	Health Services	Bev Kirk	06/25/90 - 08/03/90
Dawn Schroeder	Shipping Department	Rick Tilton	06/18/90 - 07/27/90
Jennifer Segrin	Process Control Worker's Compensation	Jim Holzgraf Jan Schnabel	06/18/90 - 07/27/90 07/20/90 - 09/10/90
Waleed Shaaban	Layout Department	Cliff Rosson	06/11/90 - 06/15/90 06/18/90 - 07/27/90
Heather Surface	Health Services	Bev Kirk	08/06/90 - 09/14/90
Shannon Tilton	Health Services	Kathy Fritz	08/01/90 - 09/12/90
Charlette Watkins	Environmental Annex Health Services	Sandy Eguchi Kathy Fritz	08/13/90 - 09/07/90 06/22/90 - 08/03/90

Graphic Technology: Block Graphics

Jason Clark	Envelope Production	Linda Cole	07/02/90 - 08/13/90
Kori Freece	Pre-press	John Smith	07/02/90 - 08/13/90
Tonya Houston	Pre-press	John Smith	07/02/90 - 08/13/90
Jason Huxford	Press	Joe Scott	07/02/90 - 08/13/90
Michael Nelsen	Collator	Jeff Trump	07/02/90 - 08/13/90
Paul Rhemrev	Pre-press	Joe Scott	07/02/90 - 08/13/90
Brian Troupe	Pre-press	John Smith	07/02/90 - 08/13/90

Health Occupations: Providence Milwaukie Hospital

Student	Site	Supervisor	Dates
Krista Davis	ER/ Med/ Surg.	Debra Larkin	07/16/90 - 08/24/90
Tricia Giering	Radiology	Cathy Leedy	07/16/90 - 08/24/90
Kim Law	Nursing Supervision	JoAnne Olson	07/16/90 - 08/24/90
Doug Rhodes	Pharmacy	Milo Haas	07/16/90 - 08/24/90
Sara Schmitke	Employee Health	Pat Truhn	07/16/90 - 08/24/90
	Infection Control	Teresa McGivern	07/16/90 - 08/24/90

Appendix F

The on-site documentation forms were utilized to facilitate communication between trainees, instructors, and in some instances the site supervisors.

OSC/AIS INTERNSHIP ACTIVITY LOG

Student Name_____ Date Picked Up by Mrs. Simantel_____

Internship Site_____ Supervisor_____

Session No._____

*The comment section should include your feelings about the tasks you are required to do as well as any problems or concerns you may be experiencing with supervisors and/or co-workers. It may, of course, also include positive feelings and any praise or compliments you have received.

Date	Tasks done (take as much space as you need)	*Comments

AIS/PCC COOPERATIVE DEMONSTRATION TRAINING PROJECT

Name_____

Date_____

Department Assignment at Precision:_____

Duties/Tasks:

_____

_____

_____

Software you are using (list specific names and what they do if they are very site specific)

_____

_____

What other skills/abilities are you finding you need to use in your job? (Consider such things as communication skills, planning and organizing, working cooperatively with others, being flexible, etc.)

_____

_____

_____

_____

What have you learned so far?

_____

_____

Do you have any concerns or problems that you would like to share? (These do not need to be discussed in the Training Seminar if you prefer; however, please let Mrs. Simantel know what they are.

_____

_____

Please attach copies of work samples—things you have done which are indicative of what you are producing at your training site. Thanks so much for your cooperation.

I'm looking forward to our first Training Seminar in AIS at 2:30 on Wednesday July 11. See you there!

Appendix G

Interns were evaluated jointly between the site supervisor and the vocational cluster instructor.

AIS LEVEL II INTERNSHIP EVALUATION
EMPLOYER'S RATING OF STUDENT'S PERFORMANCE

19___-19____ School Year **Quarter 1 2 3 4**

Student: _____ Training Station: _____

Business Name: _____ Student's Supervisor: _____

The student is receiving credit toward high school graduation. To be of greater service to this student and to make the student a more effective worker, we are soliciting your cooperation in evaluating the student's performance. The Coordinator is appreciative of your assistance. Please call him/her if you have any questions.

Coordinator: _____ Telephone: _____

In the space provided, indicate your rating of the student in each of the work habit areas.

ATTITUDE AND INTEREST
____Enthusiastic
____Interested
____Average
____Somewhat indifferent
____Not interested

HUMAN RELATIONS
____Adjusts easily—very well liked
____Good team worker
____Cooperates satisfactorily
____Has difficulty working with others
____Antagonizes fellow workers

ABILITY TO LEARN
____Grasps ideas very quickly
____Above average
____Average
____Rather slow to learn
____Very slow

JUDGMENT
____Displays excellent common sense
____Does the right thing
____Ordinary common sense
____Occasionally uses poor judgment
____Very poor—rash

USE OF MATERIALS & EQUIPMENT
____Very careful
____Careful
____Adequate
____Careless
____Very careless—needs constant supervision

QUALITY OF WORK
____Superior quality
____Tasks well performed
____Satisfactory
____Usually completes job
____Does poorly on most jobs

QUANTITY OF WORK
____Unusually high output
____More than expected
____Average
____Less than expected
____Below minimum requirements

DEPENDABILITY
____Entirely dependable—conscientious
____Requires little supervision—goes ahead
____Satisfactorily completes work as told
____Sometimes neglectful or forgetful
____Unreliable—constantly needs supervision

APPEARANCE AND GROOMING
____Always appropriately dressed and groomed
____Usually neat and well groomed
____Sometimes neglects appearance
____Should improve appearance

JOB SKILLS
____Exceptional
____Demonstrates required skills
____Acceptable
____Lacks essential skills
Additional training/instruction needed in:

_____

_____

SUMMARY—STUDENT'S TOTAL PERFORMANCE CONSIDERED
____Does much more than expected
____Performs adequately and then some
____Does what is required
____Performs somewhat less than desired
____Does a very substandard performance

ATTENDANCE: Worked _____ days
Late _____ days
Missed _____ days

COMMENTS: _____

_____

_____
Supervisor's/Employer Signature

Appendix H

The pilot project outcomes provided strong indicators for success of the CTU school year program.

RESULTS OF PILOT TRAINING

	PRECISION	BLOCK	PROVIDENCE
Number of Student Participants	12	7	5
Percentage of Program Completers	100%	100%	80%
Percentage Hired by Business Sponsors	55%	29%	0%*
Percentage Continuing Education	36%	57%	100%
Percentage Seeking Employment	9%	14%	0%

* Oregon State licensure requirements make post-secondary training mandatory for qualification as entry-level technician in the health care industry.

Appendix I

The modifications mandated by the student's school schedule provided less time per day on-site for actual training.

STUDENT COOPERATIVE TRAINING UNITS
SCHOOL YEAR PROGRAM

AIS: Precision Castparts, Inc. 90-91 School Year

Student	Site	Supervisor	Dates
Shana Bethune	Workman's Comp.	Jan Schnabel	09/24/90 - 11/09/90
	Human Resources	Linda Wheeler	11/09/90 - 02/01/91
	Training Ed.	Julie Gray	02/12/91 - 04/04/91
	Electro-Test Inc.	Melody Mills	04/15/91 - 05/31/91
Brandy Clark	Workman's Comp.	Jan Schnabel	11/19/91 - 02/01/91
	Health Services	Kathy Swan	09/24/90 - 11/09/90
	Shipping/Dist.	Larry Webb	02/12/91 - 04/05/91
	Milwaukie Police Dept.	Lon Loudenback	04/15/91 - 05/31/91
Jennifer Ferguson	Health Serv.	Kathy Swan	11/19/90 - 02/01/91
	Ed.&Training	Julie Gray	04/15/91 - 05/31/91
Jason Haggart	Shipping & Dist.	Larry Webb	09/24/90 - 11/09/90
Sara Roberts	Ed.&Training	Julie Gray	11/19/90 - 02/01/91
	Health Services	Kathy Swan	02/12/91 - 03/15/91
	Safeway, Inc. Adv.	Ruth Wagner	04/15/91 - 05/31/91
Jennifer Segrin	Shipping/Dist.	Larry Webb	01/19/90 - 02/01/91
	NC 12 District Office	Karen Lachman	04/15/91 - 05/31/91

Graphic Technology: Block Graphics 90-91 School Year

Heather Belt	Collator	Joe Stanick	10/01/90 - 01/24/91
Scott Collinsworth	Prepress	Joe Scott	10/01/90 - 06/13/91
Becky Everett	Front Order Desk	Barbara	10/01/90 - 01/24/91
Emily Fisher	Bindery	Linda Cole	10/01/90 - 01/24/91
Sasha Hilderman	Order Entry	Barbara	10/01/90 - 01/24/91
Tonya Houston	Envelope	Linda Cole	10/01/90 - 01/24/91
Wendy Jones	Jet Press	Joe Scott	10/01/90 - 01/24/91
Nancy Sharkey	Collator	Joe Stanick	10/01/90 - 01/24/91

Health Occupations: Providence Milwaukie Hospital 90-91 School Year

Student	Site	Supervisor	Dates
Jessica Axtell	Operating Room	Ruth Krening	12/17/90 - 01/24/91
	Pharmacy	Milo Haas	03/11/91 - 04/12/91
Krista Davis	Operating Room	Ruth Krening	01/17/91 - 01/24/91
Tammy Dillon	Operating Room	Ruth Krening	02/04/91 - 03/01/91
	Radiology	Cathy Leedy	03/11/91 - 04/12/91
	Operating Room	Ruth Krening	04/22/91 - 05/31/91
Tricia Giering	Pharmacy	Milo Haas	11/05/90 - 01/07/91
Kim Law	Radiology	Janelle Benton	11/05/90 - 12/07/90
Kevin Naish	Radiology	Nadine Armitage	10/01/90 - 10/26/90
	Operating Room	Ruth Krening	11/05/90 - 12/07/90
	Employee Health	Pat Truhn	03/11/91 - 04/12/91
	Operating Room	Ruth Krening	04/22/91 - 05/31/91
Heather Normoyle	Employee Health	Pat Truhn	10/01/90 - 10/26/90
	Nursing Services	JoAnne Olson	11/05/90 - 12/07/90
Shiree Sargent	Operating Room	Ruth Krening	11/05/90 - 12/07/90
	Radiology	Kathy Leedy	02/04/91 - 03/01/91
Doug Rhodes	Operating Room	Ruth Krening	10/01/90 - 10/26/90
Janet Weber	Operating Room	Ruth Krening	10/01/90 - 10/26/90
	Radiology	Janelle Benton	02/04/91 - 03/01/91
Brandon Young	Radiology	Cathy Leedy	10/01/90 - 10/26/91
	Employee Health	Pat Truhn	11/05/90 - 12/07/90
	Radiology	Cathy Leedy	12/17/90 - 01/24/91
	Operating Room	Ruth Krening	03/11/91 - 04/12/91
	Radiology	Cathy Leedy	04/22/91 - 05/31/91

Appendix J

The materials were used to orient company supervisors to the internship component of the CTJ Program

COOPERATIVE DEMONSTRATION PROGRAM

I. Rationale

A. Work force growth will slow dramatically 1990's.

B. "Taylorism" or segmented, assembly line workers no longer effective.

C. For productivity growth-need better trained workers/restructure management to "empower" employees

D. Allows company to respond to more complex technologies and more frequent product introduction

E. Front line workers given responsibilities

1. Judgment
2. Responsibility to make decisions
3. Production scheduling
4. Quality control

F. Requires large investment in training by company projections: internationally 3%-6%.

II. Project Overview (hand out program brochures)

A. Cooperative venture with industry

B. Current emerging technology

1. AIS/PCC - computers/software
2. Health/PMH - computers/software
3. Graphics/Block - computerized equipment

C. Develop model replicable nationally

Training emphasis - students attain skills not able to develop in classroom experience.

1. Critical thinking
2. Decision-making
3. Communication
4. Conflict resolution
5. Teamwork

III. Videotape

IV. Evaluation Recommendations

A. Realistic job interview process

B. Stronger orientation for supervisors

C. Balanced array of work tasks

V. Internship Sites and Schedule for 1990-91 (handouts)

A. Placements 2- 2 1/4 hrs/day

B. School Holidays and December 6th Adm. Assistant Seminar

C. Schedule Interviews Next Week - H.R. and Supervisors (discuss)

D. Strong training so students can grow technically and non-technically

E. Evaluation Process

F. Facilitate transition from classroom to workplace

G. Recognize students

H. Future partnership (W.E. as well as internships)